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ABSTRACT

Aspects of change in industrial societies as they relate to adult education are discussed in this paper which proposes a system of life-long education. New features of societies practicing adult education and new trends typical of the components of adult education systems are analyzed. Guidelines are presented for life-long education in all phases from pre-school through professional training. Obstacles to the establishment of life-long educational systems are enumerated. (RS)

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EDUCATIONAL SYSTEMS AND THE NEW DEMANDS OF INDUSTRIALIZED SOCIETIES

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This document forms part of the second series of studies (Series A : Situation, Series B : Opinions, Series C : Innovations) prepared for the International Commission on the Development of Education which was established in application of Resolution 1.131 adopted by the General Conference of Unesco at its sixteenth session. Owing to its general interest, it will be made available to those concerned with the subject. The opinions expressed by the author are entirely his own and do not necessarily reflect those of Unesco.

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DEFINITION

§ 1. Before embarking on our analysis, it is worthwhile specifying what we shall be taking the term "adult education" to mean. For us, this expression is linked to all the means of education made available to those who, having moved out of the school education stage (whether or not they completed the study curriculum undertaken) and reached majority age, have begun effective participation in social life.

§ 2. If we attempt to arrive at such a definition here, it is because the generally accepted interpretations of the expression "adult education" remain very varied and lack clarity. Most often, nowadays, the term is confused with the expression "life-long education". While this is a principle on which the overall organization of an educational system may be based, it is not in itself an educational system, as M. Tardy confirms : "Life-long education is less a supplementary teaching institution than a state of mind". (1) This confusion is to be explained, precisely, by the fact that the aim today is to apply this principle of life-long education to the entire educational system and therefore to adult education as well and in a sense "as from" this; the attempt to apply it to the latter is, besides, the latest trend in adult education. P. Lengrand observes that, "Education can from now onwards be viewed as a coherent structure of which each part is dependent on the others..." (2). Also worth mentioning is the OECD strategy group. It met in February, 1970 in Paris and in March, 1971 in Stockholm. Its main debating themes were "... the principle of life-long education, the only teaching concept adapted to the needs of tomorrow's society", and the principle of recurrent education "which would lead to remoulding the traditional divisions of the life cycle into study and work periods, to meet the newly-arising needs of modern society and individual aspirations". Or again, "the term life-long education... is a new concept embracing the totality of education divided into appropriate periods and stages throughout a person's lifetime, taking the continual evolution of his or her capacities, drives and aspirations into account, all of which vary according to the individual's age and the context in which he finds himself at different periods in his life (3). However, "... life-long education does not

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(1) M. Tardy - Réflexions sur l'éducation permanente. In Education-Culture No 3, Summer, 1966.

(2) P. Lengrand - Introduction to Lifelong Education. Paris, Unesco, 1970, p. 55.

(3) Cf. Council of Europe, document C.C.C. 9167.
It should be noted here that in 1960, in Montreal, UNESCO gave a clear lead. It recommended integrating adult education into the regular teaching system and adopting the principle of education to be carried on throughout a person's lifetime (see Hely, New Trends in Adult Education, from Elsinore to Montreal, Paris, UNESCO, 1963).

exist in any society anywhere in the world, at least on an organizational level. On the natural level, matters are different" (1). On the natural level means, on the one hand, that of changing reality, of recent empirical achievements in the field of education, and on the other hand, the level of the remarks contained in the various working documents on this subject. Such remarks may be related either to prospects which could be introduced into a short-term planning programme, or to others of a utopian order: "... ideal and inapplicable concepts which will never become anything more than imaginary while remaining, at the same time, a useful source of inspiration"(2). The first may be referred to in terms of projects and the second in terms of "utopias".

§ 3. While laying no claim to being exhaustive in a field where events develop especially quickly, we believe it is possible, nonetheless, to draft a representative chart of these new trends by analysing the most recent documents available on the subject.

Our method will be as follows :

- an analysis of the new features of societies practising adult education insofar as those features are in any way correlated to such education;
- an analysis of the new trends typical of the component elements of the adult education system

I - NEW DEMANDS WHICH MUST BE MET BY EDUCATIONAL SYSTEMS IN INDUSTRIALIZED SOCIETIES

§ 4. The most significant feature which we have selected as the mark of highly industrialized societies is that of "change", change being the expression of the process of industrialization itself, based on the development of science and technology.

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(1) J. Dumazedier - L'éducation permanente et le développement, being the minutes of an A.U.P.E.L.F. debate held in Abidjan, 1970; Montreal, University of Montreal, p. 169.

(2) M. Tardy - A Semantic Study of the Expression "Permanent Education", Council of Europe, Strasbourg, December, 1970.

Basic underlying trends of changing societies may be summarized as (1) :

- the quest for progress in the human condition and in society (as opposed to the quest for stability in traditional societies)

- the quest for equality between men (as opposed to the institutionalized and even sacrosanct inequality between men in hierarchical societies)

- the organization of scientific and technological innovation (as opposed to the custom of rigid technical skills).

These trends are characteristic of both the working and leisure lives of individuals, and give rise to a number of other features, enumerated below.

1. In working life

§ 5. The pace of technological change is such that the knowledge an individual acquires at any given moment no longer suffices for more than a few years. Adults must constantly bring certain qualifications up to date or acquire new ones. "The threat of technological unemployment is in all countries a continuing concern for considerable fractions of the active population; but on the other hand it is one of the main motivations of a whole sector of adult education" (2). This trend requires that the structure of the adult education system be overhauled. It is no longer enough to protract the period of formal education, increase the emphasis on adult education or open up new possibilities within the school system. Studies can no longer be compartmentalized into a first, specialized period of life.

- Initial, professional career-training may even become totally useless and men must be prepared to switch elsewhere (automation, quantitative and qualitative expansion of the tertiary sector, entirely new techniques...) (3). This social dynamic may be expressed in the proposition that "the more technically advanced a country, the more the

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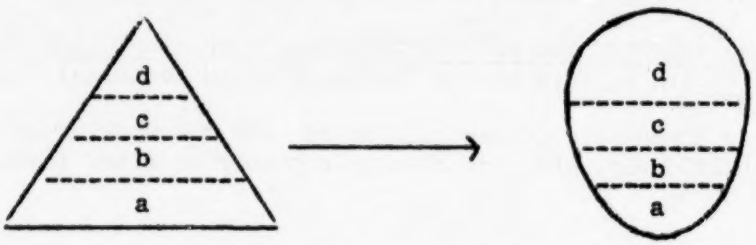
(1) H. Janne - L'éducation permanente, facteur de mutation - Permanent education, an agent of change, in Permanent Education Strasbourg. Council of Europe, 1970. 512 pp., p. 19

(2) P. Lengrand - Introduction to Life-long Education, , op.cit., p. 16.

(3) In 1968, E. Pisani in "Plan national d'éducation permanente", Review, "Hommes et citoyens", March, 1968, pub. S.E.D.H.E.C., Paris, p. 2, noted that "in France, 29 per cent of active men and 22 per cent of active women had had to modify their professional vocation in the course of the previous five years."

structure of its active population fluctuates and the more intense its social and geographic mobility", and has been defined by Torsten Husén (1). He takes four levels in the hierarchy of qualifications into consideration: (a) non-qualified workers, (b) qualified workers (mainly manual labourers), (c) professional and technical personnel without university training, (d) executive and technical personnel with university training. While one might originally have schematized the relative importance of each category by a through-section of a pyramid, that same situation is now gradually tending to be replaced by an egg-shaped section, with the narrower cone of the egg pointing downward :



- Two mutations, or radical changes, already under way are now affecting the very essence of working activity :

  . This activity is "... involving an increasing degree of control, which implies the need to 'mobilise' knowledge very quickly. It will become more important to react swiftly to an occurrence or difficulty than to possess specific skills, and to be capable of understanding an innovation and innovating oneself, than to know how to do a job in the traditional sense of the term... People must be turned into agents of change, as much in the interests of the individual as of society, since he who is mobile becomes a motive force" (2). The "practised look" and the "trick of the trade" are becoming less and less important.

  . "Dichotomies such as technique and administration or manual skill and general education, are tending to disappear; the "lathe-operator" of tomorrow will no longer be able to remain ignorant of certain aspects of data processing, statistics or management" (3).

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(1) T. Husén - Life-long learning in the "educative society" in Int. Appl. Psychol., Vol. 17, No. 2.

(2) B. Schwartz - Continuing education for adults, in Permanent Education. Op. cit., p. 78.

(3) B. Schwartz - Idem

- Industrialization leads to increasing division of labour; this is taken further and further, and it... "separates man from his kind more and more, and also from sources of information and decision-making centres. Resulting from this are specific problems of contact, information and administration" which the educational system must and can solve (1). In fact, it must inculcate into the individuals concerned the appropriate ways and means of adaptation, and these presuppose a drive (or motivation) towards change, and "such motivation can only be based on the feeling that changes are under control... by those affected"(2). Naturally, this task raises many problems of educational policy and its application.

2. In leisure

§ 6. As in working life, all aspects of non-working or leisure life are increasingly characterized by the speed with which they change, by a process of democratization and by the introduction of new techniques.

- First of all we must stress the importance of the demographic expansion problem, and also that of the increasing average life-span, which affects the demand for education. P. Lengrand adds: "Not only the volume of education, but also its function and almost its very nature, require change to meet the expansion of populations.... If we accept the principle that the expansion of our species should be made subject to rational criteria and to equilibrium between needs and available resources, it would seem that only education is in a position to apply effective and lasting solutions to a problem which affects the dignity of man and woman as well as the terms of their survival" (3).

- Industrialization is reducing the length of the working life-span and increasing the period of retirement, thereby making non-professional activities more important, and men should accordingly be prepared for them. This tendency to expand leisure activities, which no-one today contests any longer, raises the problem of defining a policy for leisure; for this should enable man to express his deeper personality (4).

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(1) K. Eide - The Organization and financing of post-work education, in Permanent Education. Op. cit., p. 120.

(2) K. Eide - Idem

(3) P. Lengrand - Introduction to Life-long Education. Op. cit., p. 14.

(4) See our report, "L'utilisation des loisirs pour l'éducation permanente des adultes" (The use of leisure in life-long adult education), in Le Progrès Social. Bulletin de l'Association Belge pour le Progrès Social. 3rd series, 58th year, No. 115, May/June 1970, pp. 5 to 60. The gain is not of course total when leisure or "non-working" time is increased: travelling, administrative formalities, as well as the need to carry out running repairs in the home all restrict leisure time. The fact remains that this is continually increasing and the balance comes out on the credit side...

- The speed of change in all aspects of life is such that the individual risks becoming a foreigner in his own society; this is particularly true in the case of women with no profession.

The ability to adapt is therefore necessary both at work and during leisure. Just as knowledge and professional experience quickly become outdated, so the personal and social experience which an individual acquires at any given moment are no longer sufficient for more than a few years.

§ 7. At this point we may note a number of major implications :

- Adaptation becomes indispensable especially in the field of information, news, etc., (conveyed more and more through oral media such as radio and television), the multiplicity of information of all kinds becoming so intense that everyone needs to be armed with tools for selection and criticism, at the risk of being alienated by the overwhelming variety of choice offered. This information, with its emotional impact through sound and vision, and its incessant renewal, does in fact leave man "knowing" more and more things yet without truly "understanding" them, and without being able to situate them in a coherent overall context which alone is capable of conferring a real meaning on them.

- The individual must, similarly, be made capable of deciding for himself, of being "inner-directed" in the world of consumer-buying, where entertainments, goods and services and publicity influence the people's knowledge, taste and behaviour, in a domain where "buying-power confers great freedom of choice" (1).

- In social and political life, citizens believe less and less that their rights and the extent to which they are well-informed enable them to act adequately in social affairs and to defend their interests effectively. That authentic participation to which men aspire and for which they should be trained is today still expressed only through sporadic action, by family planning associations, for example, or parents' schools, tenants' management committees and district protection committees. Such bodies do at the same time provide a palliative for the lack of personal relations and true group life in contemporary society. While it may be admitted that quantitatively speaking social relations are increasing as contacts multiply, qualitatively they are changing from affective, emotional, "primary" relations to functional, affectively neutral, "secondary" relations.

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(1) J.A. Simpson - Permanent Education and Community Development in Permanent Education Op. cit., pp. 344 et seq.; The French national planning commissariat has provided for the national product to triple in 25 years (on the basis of figures for 1965). This growth rate is presented as compatible with a 40 hour week, an annual holiday for all of one month and the raising of the compulsory minimum school-leaving age to 18. (cf., "Réflexions pour 1985." Commissariat au Plan).

The educational system must find an answer to this isolation, and it must do so quickly, since compensatory phenomena are already emerging in the form of passive resignation, asthenic withdrawal (in a-political attitudes or the hippie way of life, for example) or various forms of social or individual protest (ranging from delinquency to terrorism and from claims for improved conditions to explosive, "wildcat" demonstrations).

B. Schwartz is of the opinion that educational training should allow for the fact that man lives in communities and ought therefore to understand others and at times give community aspirations precedence over his own.

3. General implications

§ 8. The educational system is currently being called on to meet an extremely wide range of new demands. Generally speaking, they feature the following objectives: the satisfaction of the needs of society in the form of ever more varied qualifications, and the improvement of the quality of life, both individual and social.

§ 9. Education is very widely regarded as a key factor in meeting new needs created by technological, economic, social and cultural development, at least in the case of the educational system practising the principle of life-long education (1). Among all the new trends in adult education this is the major guiding trend which in a sense comprises all the others. It constitutes a fundamental policy premise for the immediate future.

This trend is fostered in particular by current concern over two other aims: that of providing equal opportunities in education, and of satisfying society's requirements for a diversified labour force (2).

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(1) Contradictions between the different fields being developed may well emerge, besides, as R. Castel and J.-Cl. Passeron show: "It is not certain, for example, that increasing the degree of instruction in agriculture would produce an economic yield commensurate with the investment this would require..."
in Education et développement. Paris. Mouton. 1967. p. 118.

(2) Which implies relegating the principle of "social demand" - as the basis of any future policy - into the background. (On this question cf. W. Taylor, Policy and Planning for Post-Secondary Education. A European Overview. . Council of Europe, Strasbourg, 1970. pp. 15 et seq.) The demand emanating from various social groups will probably continue exercising strong pressure, often even on grounds of equal opportunity... It will accordingly remain an important element, so far as the facts of the situation are concerned. But political action will tend on the contrary to give priority consideration to the needs of society as well as to equalization, even if this is detrimental to the more favoured groups and their demands... Spontaneous "social demand" will therefore slip into the background in a political sense.

The new educational system will be set up on the basis of its application to adult education, the development of which, given its aims, will be accorded ever-increasing priority. At this point we may repeat our earlier hypothesis, that "the development of procedures and instruments for an education adapted to men who have completed their schooling is fundamental, if we are to achieve a radical change in the nature of the entire contemporary educational system" (1).

II - NEW TRENDS IN CONCEPTIONS OF EDUCATION

1. Utopias and concrete projects

§ 10. On the conceptual level, adult education is therefore integrated into the general educational system, which must be entirely overhauled in accordance with the principle of life-long education.

The present dichotomy between school education and post-school education will increasingly tend to fade away, in favour of one, single educational system catering for professional, cultural and personal requirements, both present and future.

But many conceptual systems applying the principle of life-long education have been proposed. The very fact that there have been so many of them is important in itself, since a choice will inevitably have to be made when the reality of setting up a new system is faced.

§ 11. Given the complexity of the arguments and the manifold aspects to be dealt with, we have taken the following line in this text:

- we concentrate on the guidelines of an educational policy, steering a course between facts without ideas on the one hand and inapplicable abstractions on the other;

- the greater part of our analysis centres on new trends in adult education, firstly on the specific elaboration of a number of projects and secondly on the latest empirical achievements.

Contrary to utopias of a purely speculative nature, reappraising everything and reconstructing a totally new educational system, our projects have a direct relationship with existing social reality and as such could be introduced - mutatis mutandis - into social planning programmes in a number of countries. So far as the analysis of recent

(1) H. Janne - Permanent Education, an agent of change, in Permanent Education. Op. cit., pp. 15 to 44.

empirical achievements is concerned, this could be of assistance in introducing the appropriate framework for life-long education, making all allowances for the "unpleasant and irritating realities of daily life".

2. Guidelines in concepts of life-long education

A. School and pre-school phases

12. One thing must be stressed, among the various component elements of the teaching system recommended in the school and pre-school phases (which form basic education and are carried through to the first cycle of secondary education): and that is the cluster of new possibilities which it makes available to young people. By giving instruction on an appropriate basis, it aims to make the individual a free, independent being (1) and to keep alive his desire to continue his own training and instruction after school-life. We find the heart of the matter in Lalande (2) who distinguishes between two aspects of the educational process: that of the transmission of knowledge (action by others) and that of personal creativity (action of the person acquiring education). Such creativity is, however ... "prompted in the majority of cases by an outside person unleashing the self-educating machinery which becomes personal work thanks to encouragement or example..." Under the influence of its long tradition, school teaching is still over-closely related to the first aspect, the transmission of knowledge or information. It is becoming increasingly clear that the "creative" aspect should be primordial in the educational process, as indicated by pedagogic theory and research, more or less widespread experiments, a generally felt aspiration and practical experience of adult education which is now expanding to meet the needs of the technological and leisure society.

Underlining the truth of this is the fact that the process of "transmission" of knowledge is being revolutionized by progress in mass communication media and audio-visual techniques which present problems in entirely new terms. The use of computers is even leading us to question the rôle of memory itself, since their electronic memories can systematically store data and feed it back selectively according to needs. From now on people therefore need to be more adept at asking questions rather than giving answers bearing on information required. Admittedly, the answers are only useable if the individual concerned is capable of placing them in the relevant context of problems, and this obviously implies possessing knowledge and a certain degree of individual remembering; but the nature and aim of knowledge is changing in all fields. New instruments are transmitting knowledge, and man and the

(1) Especially where this concerns the choice of career or profession ("occupation") as H. Jocher defines it: an "individual vocation which is not definitive"; in this sense, education consists in "learning to be free." cf The future shape of permanent education, in Permanent Education. Op. cit., p. 495

(2) A. Lalande - Vocabulaire technique et critique de la philosophie Paris. P.U.F., 1962

computer are collaborating in recording knowledge in memory and using it. These facts are revolutionizing the content and method of teaching. F. Goguelin sums this up when he says: "Cartesian logic itself is absorbed by cybernetic thought" (1).

Further, H. Frese (2) distinguishes essentially two types of education, one being the detection of knowledge (the cognitive aspect of education) and the other encouraging the acquisition of disciplines and changes in attitudes and states of mind (the affective aspect of education). He comments that the direction being followed today is leading to the integration of the cognitive and affective elements.

§ 13. The guidelines for the school and pre-school phases should therefore in our view be as follows :

- The school will provide basic training but will reject encyclopaedic methods. Pupils will learn where and how to acquire information, and how to select and use it, thereby aiding each person "to understand the technical, social and cultural world that surrounds him and to become independent, that is, able to find his own place in his environment and to influence it..." (3). The Council of Europe laid down a definition of life-long education, stressing this point, as "... enabling each person to develop his personality all through his life, in his work or in his leisure activities".

- School education will show the young pupil how to teach himself through media outside the school, thereby guiding him towards independence. Teaching will therefore no longer be a unique monopoly and studies will no longer take place inside one special area, "the school". The problem to be solved here is "... how to create a process of self-development through

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(1) In "La formation continue des adultes", Paris, P.U.F. 1970

(2) H.H. Frese - Permanent education, a strategy of social action, in Permanent Education. Op. cit., pp. 457 & 458.

(3) B. Schwartz - A Prospective view of permanent education in Permanent Education. Op. cit., p. 53.
E. Pisani's remarks concerning the weight of school programmes show a similar concern (in Plan national d'éducation permanente. Bulletin Hommes et Citoyens. Op. cit., p.2). We must avoid overburdening the adolescent "... with the weight of already overcharged programmes, and protracting a school career the length of which is already, at times, leading to problems... The initial compulsion to attend school is less to accumulate knowledge than to acquire the taste and the means of learning it."

individual self-education, through various stimuli such as the teacher, the tutor, the librarian" (1) and - we may add - a new technology for transmitting apprentice-learning and methods of evaluating knowledge and information. Study levels may be made independent of the students' age: the traditional age-group class system will be abandoned.

- Educative activities must have a direct relationship with daily situations, showing the young student their use and leading him to want to continue educating himself. But in a changing society, these activities must cease being merely a question of conservation and a factor of inertia; they must become an "agent of change" (2).

- Education must "concentrate on 'reaction' rather than action, on originality rather than routine, on the unusual rather than the usual" (3) thereby responding to changes in the nature of work in which we find more and more activities "orientated towards control"; "it will become more important to react swiftly to an occurrence or difficulty than to possess specific skills, and to be capable of understanding an innovation and innovating oneself, than to know how to do a job in the traditional sense of the term" (4). Furthermore, given widespread automation and the quantitative and qualitative growth of the tertiary sector in many Western European countries, man and especially young workmen will have to hold themselves ready for reconversion.

In such a context, life-long education becomes necessary, requiring the development of educative organization outside school. We shall return to this point later on in our analysis. These institutions will answer the needs of reconversion, of professional and cultural "finishing" for workers and will guarantee "... an adequate link-up between school education (which will become less and less the final stage of vocational preparation) and the young person's entry into employment" (5).

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(1) J. Dumazedier - L'éducation permanente et le développement, in minutes of the A.U.P.E.L.F. debate in Abidjan, Op.cit., p. 175.

(2) cf. report of the Netherlands Student Council (quoted by H.H. Frese, Permanent education, a strategy of social action, in Permanent Education. Op. cit., p. 458 et seq.) and recommendations made by F. Bonacina - Sociological motivations and cultural prospects of permanent education, in Permanent Education. Op. cit., p. 446.

(3) B. Schwartz - Continuing education for adults, in Permanent Education. Op. cit., p. 78.

(4) B. Schwartz - Idem

(5) F. Bonacina - Sociological motivations and cultural prospects of permanent education, in Permanent Education. Op. cit., p. 448.

B. Professional (career-training) and post-professional phases

§ 14. After the primary educational or school phase which will tend to produce "adaptable, polyvalent" people, and will offer instruction in absolutely indispensable basic knowledge, taking the new context of techniques and information into account, we may discern three other phases.

- A basic, professional training phase

  This phase is aimed neither at acquiring qualifications or at specialization. It offers many options. In the reforms to the educational structure proposed by Tietgens (1), the second cycle of secondary education is formed of sections which are merely "orientated" towards future professional branches: a technological section orientated towards the sector of production, an organizational techniques section orientated towards the distribution sector and a human sciences section orientated towards the social services sector. Sweden, in a similar spirit, has elected to use its professional, career-training system to train people in broad vocational groups ("blocs de métiers") rather than in specific specialities.

- A professional qualifying phase

  Its aims may be expressed as :

  . a qualification is accorded,
  . a qualification is updated, or
  . a qualification is perfected.

  Such professional qualifications, responding to concrete professional needs, cannot however derive in the main from the enterprises which will make use of them, particularly so far as a complete, overall qualification is concerned. Accompanying professional training for a concrete function adults will be offered a "possibility of cultural fulfilment".

- A phase corresponding to the age of retirement and which must aim at the creative use of time, with or without some economic or utilitarian purpose, depending on the individual case.

§ 15. B. Schwartz has put forward what seem to us to be extremely sound hypotheses on the subject of the educational structure which should be set up to impart this basic training and career apprenticeship.

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(1) H. Tietgens - Restructuring education, in Permanent Education. Op. cit., p. 320.

The entire educational system following the compulsory school-attendance phase would offer "units": basic units, technical units and professional units. These units are defined in terms of the method-content - theoretical or practical - which has to be mastered. Each pupil would achieve such mastery through his own individual work, according to his own pace and capacities, in the time which suits him... The organization of teaching would help him to this end, and in particular would teach him how to learn and how to evaluate himself. Acquisition by the pupil of a certain number of basic units and techniques would be equivalent to a "grade". This would constitute recognition that he had achieved a certain level in his studies in the group of subjects in question. In order to obtain a "diploma" he would have to acquire a certain number of professional units in addition. ("The diploma, here, is therefore the sum of a grade and a period of professional training") (1).

Certain basic units or techniques would be common to all diplomas (the "trunk of the tree" common to all), certain others would be shared by "families" of diplomas, while others would be "free".

A system of this kind would enable the student to leave the "trunk" at any moment in order to acquire a diploma, or, on the contrary, to return to it and resume his studies so as to improve his "grade". The order of acquisition of these units would have to be flexible, to enable individuals "to pursue the education that best suited at any time their intentions, their abilities and their experience".

In short, Bertrand Schwartz here makes a breakaway from the group unit and the class unit implied by traditional structures and replaces these with "a system of curriculum units being studied by groups of pupils with their own individual rates of progress (a pupil might well be in the fourth form for mathematics and in the second for his mother tongue)".

§ 16. Among the advantages of such a system, prominent is the fact that it helps to solve problems of employment and selection. And indeed, if pupils, students and adults are on the one hand kept informed at all times of estimated employment needs, and if they on the other hand can at any time change their vocation easily, by taking

(1) See the report by M. Deshons. "De quelques aspects d'une action collective d'éducation permanente. In minutes of the A.U.P.E.L.F. conference held in Abidjan in 1970. Op. cit. pp. 201 to 240, containing an example of the acquisition of professional aptitude certificates through cumulative units.

this or that "additional specialised unit, the risks of disparities between manpower supply and demand would be very small. Furthermore, the problem of selection would be solved to the extent that pupils, students and adults would really be able at any time to leave, return, change and take up again". There would be less fear of leaving school "for people leave school more readily if they know that they can go back there and, above all, that if one has left at a given stage, it is not as a person who has 'failed in something' but, on the contrary, as a future applicant for admission to some other course or a person ready to embark on some career".

This new educational system would be applied in a regional framework (1) with a minimum of national institutions to ensure co-ordination, and a certain number of services.

These educational "dispensing" centres would be governed democratically.

C. Phases in post-secondary education

§ 17. The part played by the university and other post-secondary establishments is growing continually, both in quantity and diversity. The educational procedures adopted have changed, making the establishments in question better adapted to the overall needs of societies as well as to the needs of the various categories of people who attend them: adolescents, young people and adults. But this adaptation has been less in response to specific needs than as a result of the pressure brought to bear by mass phenomena on the structures of post-secondary education, on its teaching-content and on methods of evaluating knowledge. The relative breakdown in structure as compared with the greater rigidity of traditional institutions has indirectly catered to adults' interests. Awareness of this is growing, and its consequences may be formulated :

- universities and post-secondary establishments in general are "schools" in those branches of instruction not intended for "adults" (cf. our earlier definition), and as such take in "young people" who have not interrupted their studies to take up professional activity, and devote all their time to those studies;

- universities and post-secondary establishments in general participate in the "adult" education system :

(1) In "municipal centres for education and culture" (Tietgens), in "knowledge diffusion centres" (Janne), in local, regional and national centres (Schwartz).

1°) where the access to, the statutes and organization of their instruction, while being that of a "school", have been specifically modified to meet the needs of "adults" interrupting their professional activity to resume study or dividing their time between professional activity and higher education;

2°) where their instruction has been arranged in special sections or activities designed to meet the specific needs either of "adults" exercising some professional activity or having private financial resources, or of women attending as partners of a man who has embarked on professional life.

§ 18. Among the essential characteristics of post-secondary education today, we may mention the following :

1°) Such establishments tend no longer to limit their activities exclusively to full-time education available only to those who have completed secondary school studies. In general, authorities prefer to make access easier and more widely available, based either officially or unofficially on a numerus clausus (number of openings available). In fact there are two opposing traditions governing the admission to post-secondary education: the first (open access) guarantees a student the right to attend such an institution on the basis of the results achieved at a given educational level (the Baccalauréat in France, the Abitur in Germany, the certificat de maturité in Belgium). The second (numerus clausus) awards admission by accepting only a limited number of candidates who have complied with the criteria for entry. In France, this latter practice is followed by certain "grandes écoles" and medical faculties. The first case contrasts with the second in having a higher rate of "drop-outs" in the course of the studies following entry, and establishments following this tradition accordingly have a low productivity. What is more, the excessively large number of students tends to impair the quality of the environment, background, the instruction itself and the evaluation of results. Yet the application of a numerus clausus involves rejecting students who might have succeeded. Finally, setting out from a broad base increases the possibilities for selection at higher levels. Each tradition has its weak points and a solution must be found to this polarization at the two extremes.

Stricter conditions must be envisaged in the case of entry to post-professional, long-term instruction, leading to professional qualifications of a higher degree. But even in this case "a liberal admission policy must continue to be applied - more liberal than current university practice".

One solution consists in organizing an entrance examination for those failing to comply with official requirements, always on the understanding that such an examination test not the level of scholastic achievement required, but merely the candidates' specific capacity to undertake the studies in question. In other words, questions would bear not on any particular form of intellectual luggage picked up in the course of earlier study curricula, but on the basic knowledge and intelligence objectively necessary to solve the problems arising out of the studies envisaged. This is one juncture where the entirely or partly self-educated man comes into his own...

The basic principles of the systems already proposed include (1) : (a) the organization of study cycles to meet individual needs (study programmes being composed of units); (b) enabling the student to link various disciplines not necessarily taught in one and the same establishment; (c) the organization of education in periods, for people already employed; (d) making the most efficient possible use of existing staff and accommodation; (e) the combination of direct teaching with systematic instruction by multiple methods - known as multi-media.

2°) The organization of studies is becoming noticeably more flexible.

The period of full-time study preceding entry into active life cannot be protracted indefinitely. This consideration leads us to envisage the possibility of scheduling a period of productive employment between the various phases of full or part-time instruction (2) or

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(1) E. von Weizsäcker et al. Baukasten-Gesamthochschule. Stuttgart. Druck und Verlag, 1969.
R. Pedley. The comprehensive university. Exeter, University of Exeter, 1969.

(2) This is known as the "sandwich" method. It affords some possibility of compensating for chance differences between students which may have emerged while they were at school - even at its highest level.

of planning "short" instruction periods, that is to say of high level but lasting less time than usual university study programmes, or, finally, of composing a two-year "module" which could be used as the basis for a large number of courses of instruction.

Developments show the following marked tendencies: (a) Some establishments have introduced alternate phases of theoretical and practical instruction, in the course of which certain students undergo a two-year apprenticeship in a factory before beginning instruction in theory; (b) Some countries have set up a system of short (two-year) teaching periods which precede the final stages of instruction; this system tends to reduce the high rate of student "drop-outs" due to the practice of unrestricted access, and also to allow for lassitude on the part of some students confronted with excessively lengthy studies, which they would prefer, however, to resume at a later date. Present conditions do not permit this, since the first study cycle comes to no scheduled conclusion of its own, of the kind which would justify interrupting it at that point; (c) The flexibility introduced into the organization of studies may also be seen in the institution of study cycles of varying length, which requires establishing a "module" which can be used as the basis for a large number of training programmes; (d) Another aspect of this orientation may be found in "extension lecture" services, or in "centres for permanent education" offering programmes in preparation for the secondary school-leaving diploma, introductory language courses, etc... This provides a remedy, to some extent, to the absence of certain basic elements required for higher studies.

3°) One final aspect is that post-secondary educational institutions now play an increasingly important part in "perfecting" the training of adults during their active life. (In the strict sense it is "perfecting", but may also involve a conversion course within one profession or even to another, different profession). Current developments are marked in particular by special sessions for perfecting the training of the professional and executive classes.

D. Content, aptitudes required and methods

§ 13. Throughout the new educational system, one important problem remains to be solved: it concerns the content of teaching programmes, the aptitudes required and the methods to be applied.

This involves the dialectical play between stability and change, the internal consistency of the teaching system and also its cohesion

in relation to the external environment (biologists might call this a problem of homeostasis). But it is not enough merely to define the problem: we must produce the means with which to solve it... (1)

§ 20. In direct correlation with the problem of content is that of the aptitudes to be acquired: many authorities regard it as even more important than the preceding one. For adults, this involves a continual development of the "art of learning", the capacity for judgment, for team-work, for the use of imagination and the exercise of responsibility which is taught earlier on to young people and prepares man "to fulfil himself through a métier". This presupposes that the aim of adult education is to train or "form" people, not merely to transmit a technique or an item of information to them. This, however, is far from being the aim approved, as yet, either in public administrations or private enterprise. One is accordingly led to wonder whether, in these circumstances, "remedies" such as participation in management, human relations and economic democracy really do ward off the dangers of alienating people in and through their work. For according people the opportunity and right to act ("giving them their word to say") without creating in them the requisite aptitudes for availing themselves of those rights and opportunities will lead straight to a mechanical state of mind or to frustration.

§ 21. Pedagogic methods are traditionally either of the didactic type, where the teacher's image is that of a "professor", or of the active type, where the teacher is a kind of master of ceremonies. Hartung's view is that it should be possible to introduce a third type, synthesizing the didactic and active processes. This method would give educational action the aim of carefully observing a given situation (with mainly didactic intervention) and then analysing it (impelling students towards intellectual activity).

One finds the principle of observing situations in processes such as simplifying labour, "training within industry" (T.W.I.), case-studies, mental training, work-simulators or initiative games and other psychological approaches which "... consist in the first place in discerning the concrete facts involved in a professional technique or in discovering, eventually, the 'mechanisms' governing human relations". We may note that the observation in question is of a participatory nature, and accordingly comprises an element of personal activity.

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(1) Several years ago the more advanced countries of the world installed a supreme body at the summit of their educational organizations; its task is to conceive new ideas, to offer advice, to experiment and to authorize innovation, the authorities' aim being to institute a permanent, dynamic machinery for reform: one example is the Swedish "rolling reform" system.

Following the approach through observation, the general principles of analysis are established and then verified in fresh circumstances, and conclusions drawn. These aims may be found in T.W.I. and in processes such as practical leadership training, practical staff training and in training for the métier of chief executive (1).

E. Life-long career guidance

§ 22. An indispensable accompaniment to the construction of an effective system based on the principle of life-long education is a life-long career guidance service. Its task is to advise individuals, at all stages of their life, on their choice of professional activity and the studies leading to it or enabling progress towards it to be made. Allowance must be made for the requirements involved in that activity, for quantitative forecasts relating to likely employment capacity and also to the satisfaction it may be expected to afford to individual aspirations.

Application of the principle of life-long career guidance (2) is inseparable from that of life-long education. It is all the more indispensable in that it must cater not only to young people's needs but also to those of the present adult generation which, in general, received less education than the younger generations attending school today. And the adults of today are in danger of being superseded in a few years by the new generation, on the labour market, since the latter has greater potential for promotion.

From the pedagogic point of view, widespread career guidance would lead to replacing the present, negative selection systems, based on eliminatory examinations, by a system of positive selection based on the search for the best areas in which to apply individual aptitudes.

F. Obstacles to the establishment of life-long education

§ 23. Putting this kind of reorganization of the educational system into practice would of course meet with obstacles, both those inherent in the system and those extraneous to it :

- the fear of change : any plan beamed on change will be suspect and, if the authorities concerned adopt it, will meet with overt and covert resistence, whether organized or individual, conscious or unconscious;

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(1) H. Hartung - Pour une éducation permanente. Paris, Fayard, 1966. p. 45. Readers may be referred to several chapters in his book proposing a detailed method.

(2) To appear shortly: L'orientation scolaire. Text in stencil, April 1971, "Plan Europe 2000", European Cultural Foundation.

- the attachment to "reason" - frequently distorted into "good plain common sense" - is characteristic of many Europeans and hampers new initiative through lack of imagination or disposition for concrete research;

- slow progress in research into the individual's motives for pursuing his own development, both culturally and professionally. Research into varying intellectual and personality aptitudes for study in relation to age has been carried out, but mainly in the field of "school" education.

  With the exception of post-secondary education, scientific efforts to date have been concerned only to a very small extent with the other types of adult education: "... there exists at present no theory of or model for adult learning..."(1).

  These inadequacies emerge in marked fashion from the summary in the Review of Educational Research of research into adult education (2).

§ 24. According to one age-old tradition, education should be contained within early childhood and adulthood. That tradition has been somewhat disrupted today: "Talk of pre-school education is therefore in line with current trends which may not everywhere be fully comprehended at the moment but which nevertheless exist." - we need only think of institutions such as kindergartens. "Talk of

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(1) Recurrent Education, note by the Secretariat following the Second Conference on the expansion of and access to education, held in Stockholm in March, 1971. Paris. O.E.C.D. Centre for Educational Research and Innovation. February, 1971. p. 13.

(2) Vol. XXV, No 3, June 1965. Howard MacClusky shows that the differential psychology of adults is insufficiently developed and notes in particular that research is lacking in the area of aptitudes characteristic of adults in the lower strata of society. Gale Jensen and Albert Schrader deal with the socialization process and the only results they are able to record on this essential subject are a few obvious generalities, so far as adults are concerned. Conclusions on the dynamics of groups as presented by R. Boyd could however be better mobilized and adapted to adult training methods. The situation does not seem to have changed to any great extent since 1965, although awareness of the urgent need to bridge these gaps does appear to have become more acute, which is the first preliminary step towards an appropriate development in research.

post-school education, however, is still apt to sound something of a paradox" (1). Recent psychological research has thrown doubt on the usually accepted educational axioms: that education is centred on the second period of childhood and adolescence, and education conceived of as a continual process during the time in which it takes place. Research has established two new principles: education to be spread over very disparate periods of man's life (including the "third" age), and education carried out with no special continuity in time, at various periods, separate from each other.

§ 25. G. Lanteri-Laura (2) has sought to bring the scientific fundamentals of these principles together by summarizing the unquestionable results obtained in various branches of psychology, and noting the gaps in our knowledge which still persist : "We should not expect these to reveal either a unitary principle - the present state of our knowledge allowing us to form more than one concept of the evolution of man's intelligence - or to point to one branch of psychology as being superior to the rest, since even genetic psychology cannot offer us a complete picture of this field of knowledge" (3).

§ 26. Gaps in current psychological research are of three kinds :

- scientific facts have been established mainly on the basis of experiments on animals: to what extent may findings be transposed to man?

- abnormal psychology shows that the need for knowledge depends on physiological and affective, emotional factors, "But that is a piece of information which is based on negative foundations. In this case pathology has no positive contribution to make." (4)

- genetic psychology makes a considerable contribution to (... our knowledge of...) the periods of childhood and adolescence (5). Little is known, however, about the period of maturity (6).

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(1) G. Lanteri-Laura - Psycho-sociological research into the paths and phases of intellectual maturation and the desire for knowledge" (from childhood to the third age). in Permanent Education. Op. cit. p. 207

(2) G. Lanteri-Laura - Idem

(3) G. Lanteri-Laura - Idem, p. 210

(4) G. Lanteri-Laura - Idem, p. 223

(5) Cf. works by H. Wallon, J. Piaget, Claparède, Gesell, Koffka. Very recently, special attention has been concentrated on the intermediary period between early childhood and the first stages of primary school.

(6) Wechsler's work on the concept of a deterioration index remains very limited.

§ 27. J. Piaget recently raised the important problem of intellectual evolution between adolescence and adulthood (1). The central question is to know whether, at the age of fifteen to twenty, namely "... that of the beginning of professional specialization and therefore of the construction of life-programmes corresponding to individual aptitudes", there exist "... as at earlier levels, cognitive structures common to all individuals but which each person will apply or differentiate according to his own personal activities" (2). Piaget believes the answer to this will be in the affirmative but requires further research which should also "... analyse all the probable differentiation processes; either the same structures are adequate to the organization of different areas of activity but with differences as to their mode of application, or there are special personal structures which remain to be discovered and studied" (3). Whereas "... developmental psychology used to believe, generally, that its work could conclude with the study of adolescence..." we see today that it is moving on to the study of young adults, and we hope that in the near future ... (psychologists) ... will take up the period of maturity as a field for research". This is one consequence of the tendency towards "life-long education".

§ 28. In this respect, recent research in differential psychology may be extremely useful in making a methodological contribution as well as a critical and constructive one. This branch of psychology is, in fact, in a position to operate through a multiple variation in experimental conditions, whereas other branches of psychology are frequently reduced to elementary models.

§ 29. It is difficult for the authorities to set up new methods answering to new needs while at the same time maintaining the traditional organization which, of course, remains indispensable. From this point of view, teachers "absorbed in the immediate problems arising out of educational activities carried on in a rapidly changing environment" will regard the idea of life-long education as "one additional burden" rather than as a help in the solution of such problems.

It may be added that obstacles are exacerbated by the fact that the present machinery for dispensing formal education is controlled by those traditionally accustomed to thinking mainly of young people.

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(1) J. Piaget - Intellectual evolution from adolescence to adulthood in "Foneme", Milan, May 9/10, 1970.

(2) J. Piaget - Idem, p. 156.

(3) M. Reuchlin. - La psychologie différentielle. Paris, P.U.F. 1969.

One further somewhat vague condition must be allowed for: people in all walks of life should feel involved in the problem, and life-long education should be recognized as being in the public interest, if there is to be any hope of carrying out serious reforms to the educational system in this direction. Finally, the natural inertia of traditional culture cannot be overlooked. If the educational system has adapted itself, through force of circumstance, to the specific values of the "Promethean" societies, this has nonetheless failed to extirpate old values, such as those of classical humanism, whose roots reach back into pre-industrial societies. This "humanism" has remained interwoven in the values of technological society without any real, selective integration of the two having taken place. It is a source of inconsistency within the educational system...

G. Objectively "revolutionary" aspects of the life-long education system

§ 30. In conclusion, the new educational system, conceptions of which are currently taking on great social and political significance in industrialized societies, implies a number of revolutionary structural changes, at least in relation to the educational tradition in Western societies :

- studies will no longer be subjected to a pre-defined, statutory pace and duration;

- the level of study will be independent of students' ages; school classes based on age and on a rigorous, overall sequence of studies have had their day; students will be grouped irrespective of age and will change disciplines with each particular phase;

- diplomas will bear witness to the degree or level of studies attained only through the acquisition of "units". The diploma will lose its absolute nature... "providing a false sense of security, and become a certificate of aptitude to tackle a given position without serving as a guarantee of being maintained in such a position in spite of mediocre performance" (1).

- Teachers will no longer be "lecturers" and "demonstrators" but advisers, masters of ceremonies, guides and monitors.

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(1) J. Capelle - The Development of permanent education. In Permanent Education. Op. cit., p. 380-381.

- Continual watchful guidance will, as we have indicated, be substituted for present processes of negative selection, and the concept of failure must disappear, at least as an institutionalized verdict (1).

- Studies will be individually self-directed with the assistance of teachers and backed by the gradually increasing use of computerized, electronic and audio-visual methods.

- Studies will no longer be carried out in a specially characterized place known as "school". They will be linked to guidance centres, documentary and information centres, mass media broadcasts, didactic advice and working groups.

- The content of subjects and training dispensed to adults can no longer be imposed from above but must be determined as a function of analyses of needs within a particular milieu or environment (2).

§ 31. In the last resort, criticism is aimed at the traditional forms of "school classes", "schools" and "diplomas", the uniform and rigid structures for studies and the principle of training or educating man only during the years of his youth (3).

The classical schematic division of life into three stages will rapidly break down under the influence of such factors; these stages can still be typified today as :

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(1) However, Sauvy points out that when studies themselves fail to effect an adequate selection, in reducing the number of people holding special qualifications to the labour market's capacity to absorb them, public and private enterprises called on to employ those with such diplomas will necessarily perform the same task.

(2) This is the policy practised by the French C.U.C.E.S. in Nancy. Cf. M. Deshons, on several aspects of collective action in life-long education, a report delivered to the A.U.P.E.L.F. conference in Abidjan (Op. cit.), 1970.

(3) "If it is agreed that the educational process must continue throughout the life of the individual, then it is impossible to argue that there is an age set aside for education". In Introduction to Life-long Education, P. Lengrand. Op. cit., p. 45.

- School life, in which man, while young, must provide periodical proof that he has memorized, understood and assimilated a certain store of knowledge and techniques which will serve as a basis for all his later activities;

- Professional life, divided into two phases: one during which man puts his knowledge to advantageous use, to foster his personal career and be of functional use to society, and the other, after the age of 40, when many men feel a renewed need to learn and add to their knowledge, but with the aim rather of complementing or rounding it out;

- And finally, retirement, when man is called on to cease all professional activity, in the usual sense, to live a more or less organized life of leisure, to the needs of which society's response is less rather than more satisfactory.

This, then, is what life-long education centres on. These, of course, are the tendencies in that direction, for all kinds of obstacles and difficulties, as we have shown, are acting as a powerful brake on an evolution which, however, remains an imperative requirement of the fundamental factors in social development.

§ 32. In this light, tomorrow's education must form a co-ordinated totality in which all sectors of society are structurally integrated. It will be universalized and continual. From the point of view of individual people, it will be total and creative, and consequently individualized and self-directed. It will be the bulwark and the driving force in culture, as well as in promoting professional activity. This movement is irresistible and irreversible. It is the cultural revolution of our time.

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